Forecasts of California Transportation Energy Demand 2005-2025

2005 Integrated Energy Policy Report

Fuel Types/Sectors

- Gasoline
- Diesel
- Electricity
- Natural Gas
- Commercial Jet Fuel
- Freight
- Transit
- Commercial Aviation
- Private light-duty vehicles
- Commercial light-duty vehicles

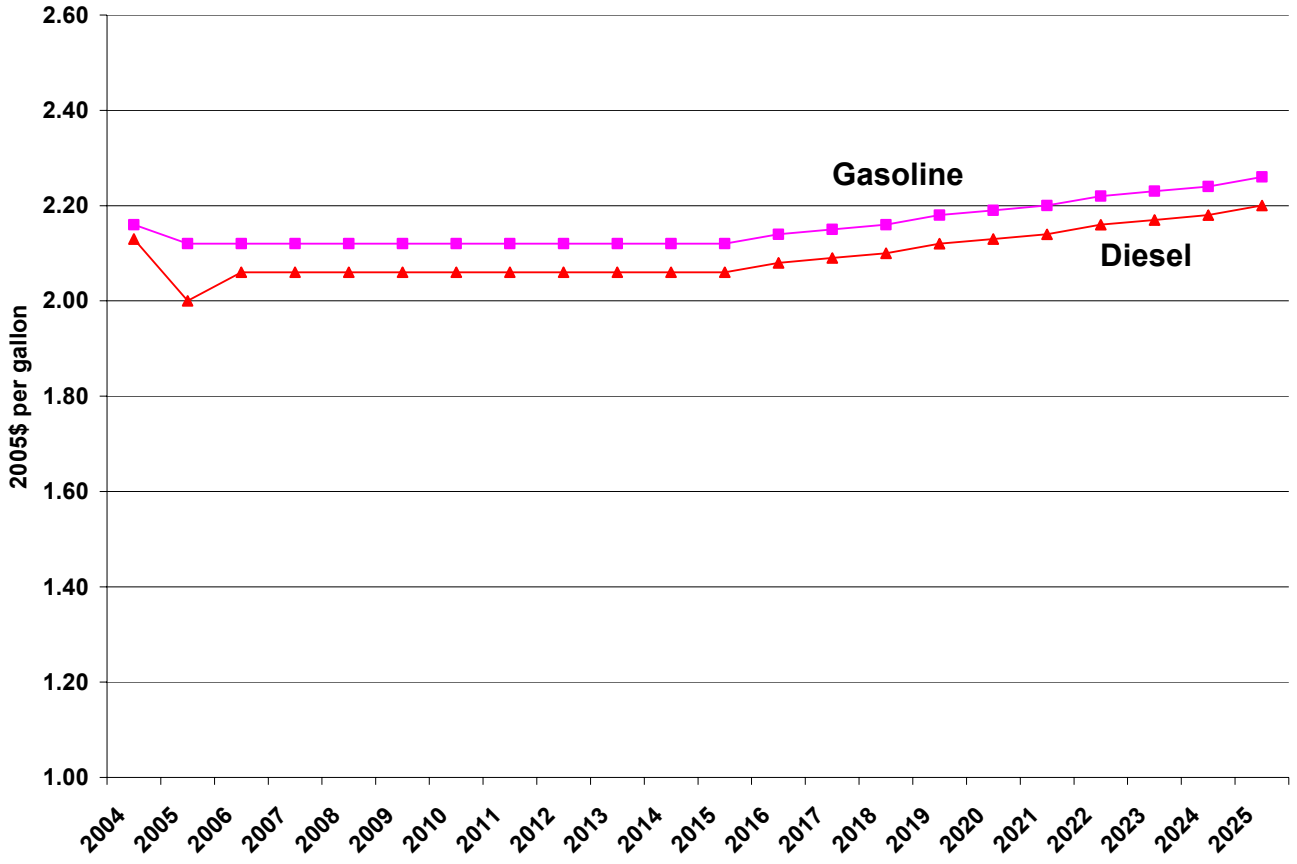
Models

- CALCARS: light-duty personal and commercial fleet vehicles
- Freight Model: on-road and rail goods movement
- Aviation Model: commercial aviation

Key Assumptions

- Gasoline and diesel fuel prices based on 2005 EIA Crude Oil Price Forecast from *Annual Energy Outlook*. Gasoline price: $2.16 in 2004 (2005$), $2.26 in 2025. Diesel price: $2.13 in 2004, $2.20 in 2025.
- Jet fuel prices based on FAA forecast
- Population grows by an average of 1.15 % per year, employment by 1.5 % per year, personal income by 2.3 % per year

Projected Gasoline and Diesel Prices (2005$)



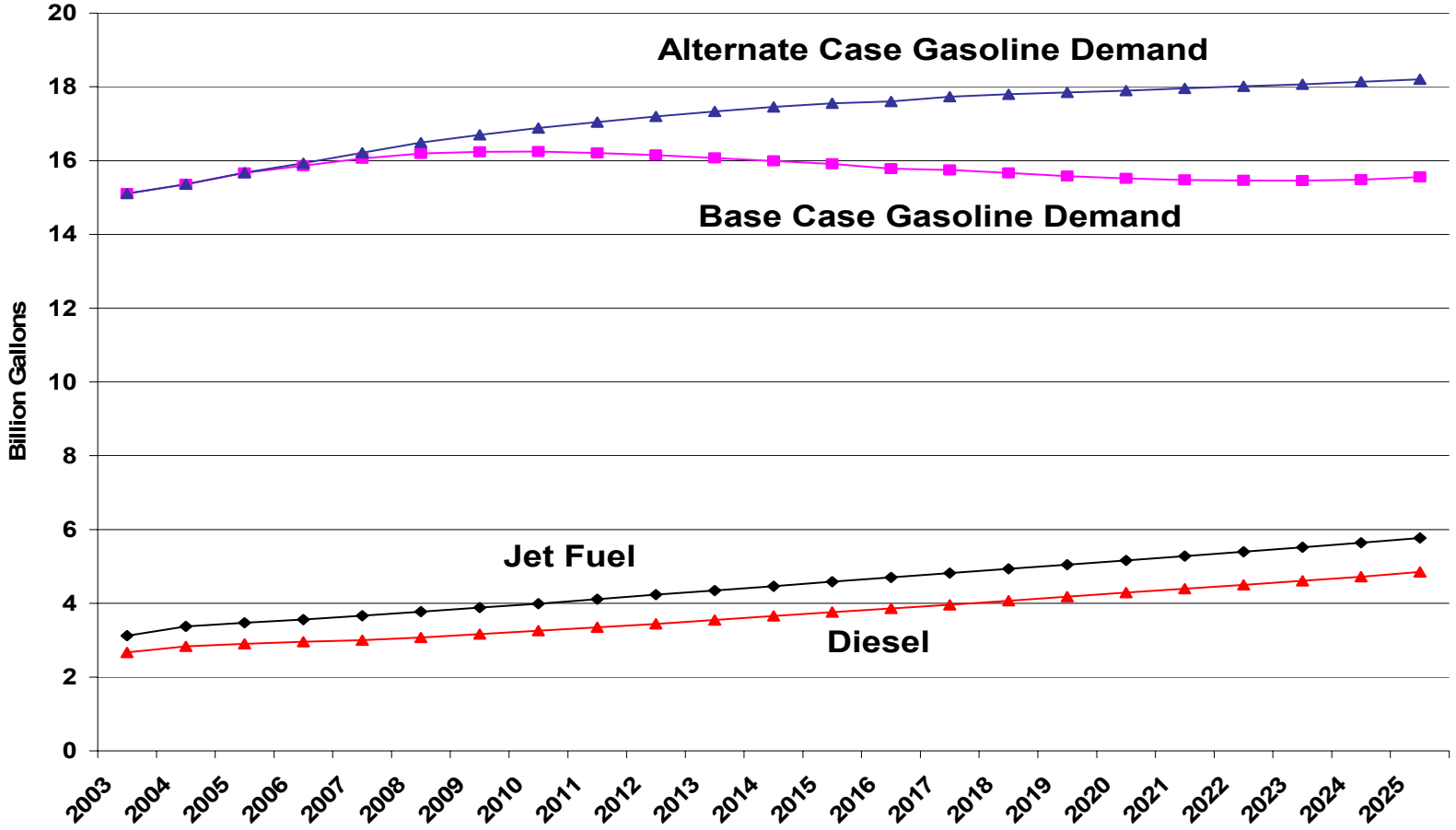
Key Assumptions, cont.

- Forecast for electric hybrid light-duty vehicles consistent with CARB Zero Emission Vehicle requirements
- Diesel light-duty vehicles available starting in 2008
- Base case forecast assumes implementation of greenhouse gas regulations, alternative forecast does not

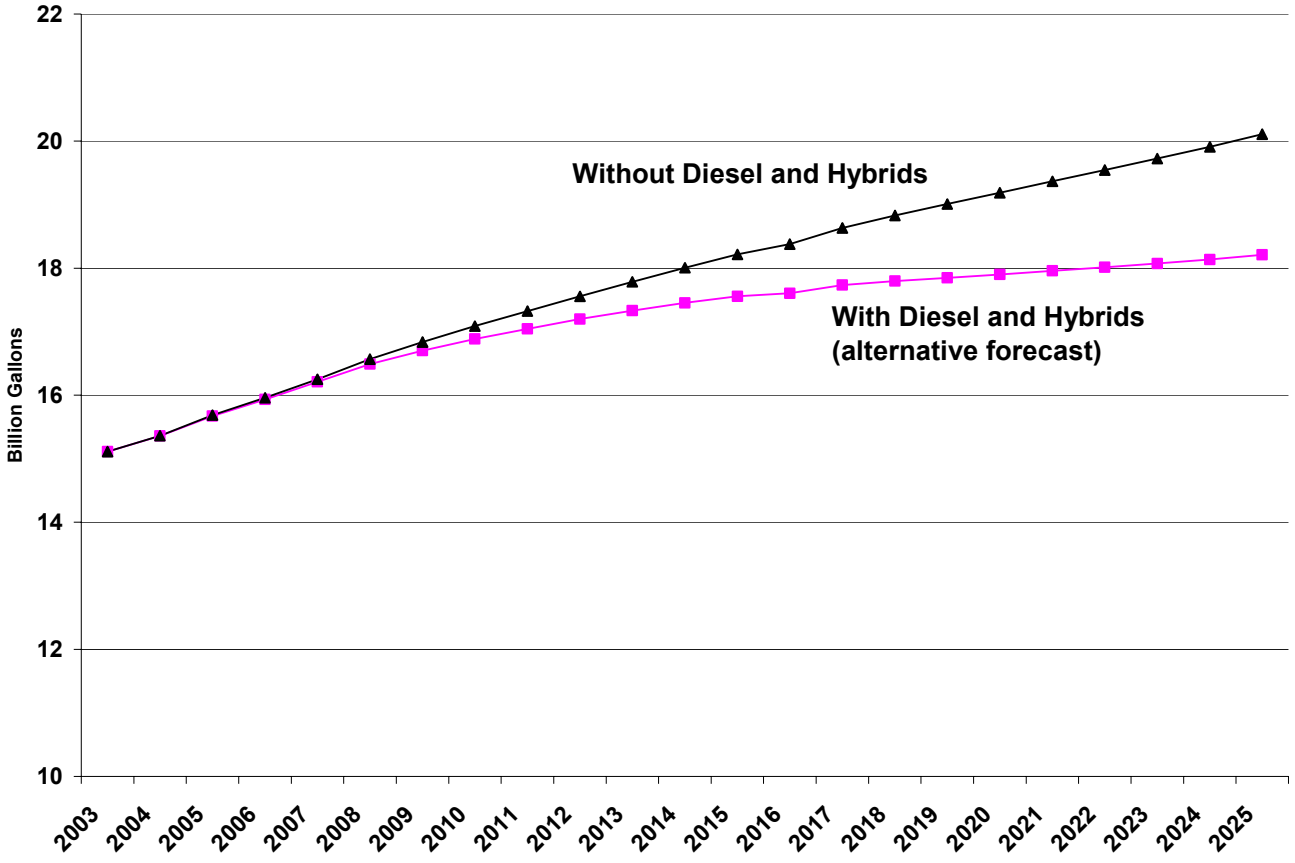
Demand Forecast Results

- Gasoline demand in California grows by an average of 0.1% per year in the base case forecast and by 0.9% in the alternative forecast from 2005-2025
- Diesel demand grows by an average of 2.7% per year in the base case forecast and by 2.9% in the alternative forecast
- Jet fuel demand grows by an average of 2.9% per year
- Average fuel efficiency rises by 33% over the forecast period in the base case and by 10% in the alternative case.

Demand Forecast Results



Impact of Hybrid and Diesel LDVs on Gasoline Demand



Other Results

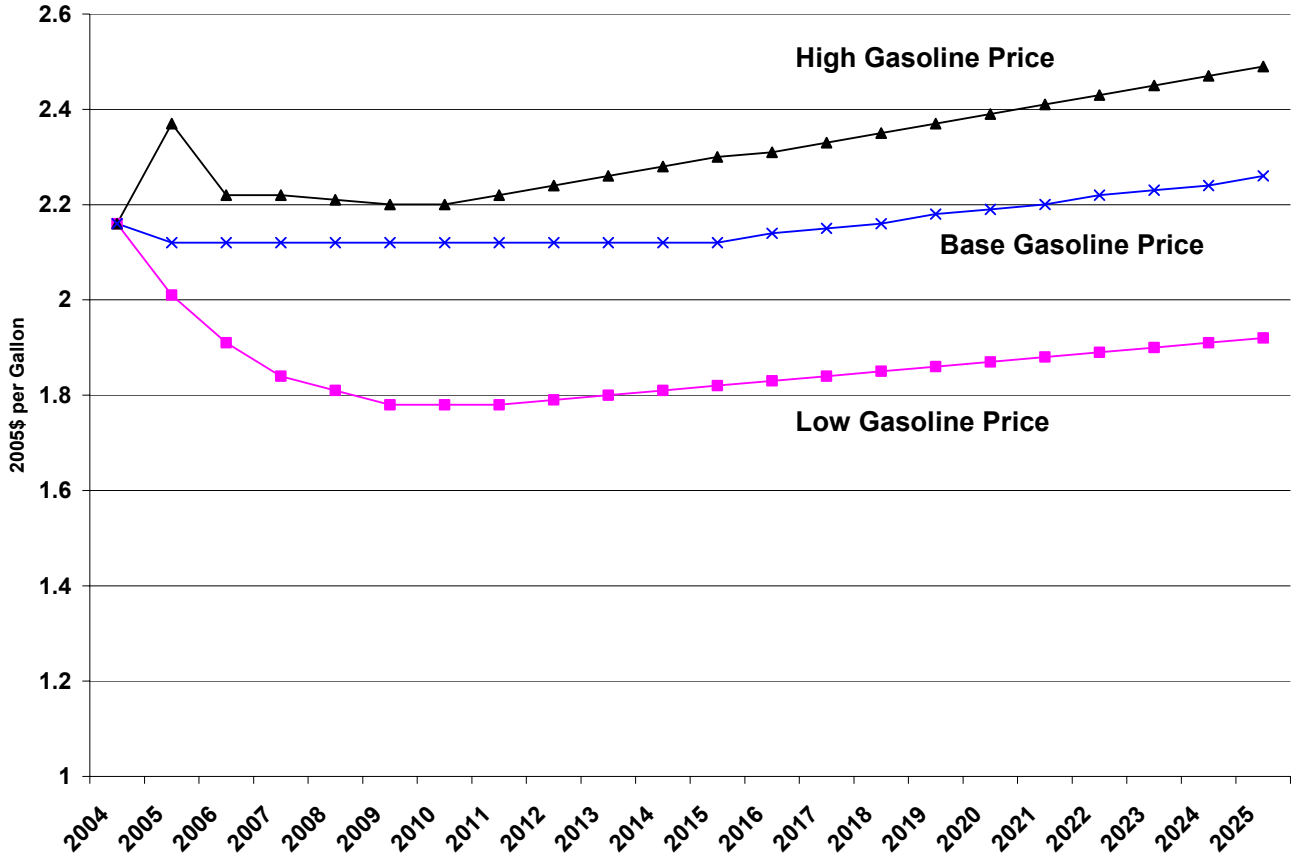
- On-road vehicle miles traveled projected to rise by an average of 1.75% per year in the base forecast and by 1.65% in the alternate case
- Number of on-road vehicles projected to rise by around 1.5% per year in both forecasts
- Transportation electricity use projected to grow from 600 million kWh in 2003 to 1,800 kWh in 2025
- Natural gas demand in on-road vehicles projected to increase from 75 million therms in 2003 to 200 million therms in 2025

Comparison with 2003 IEPR Forecast

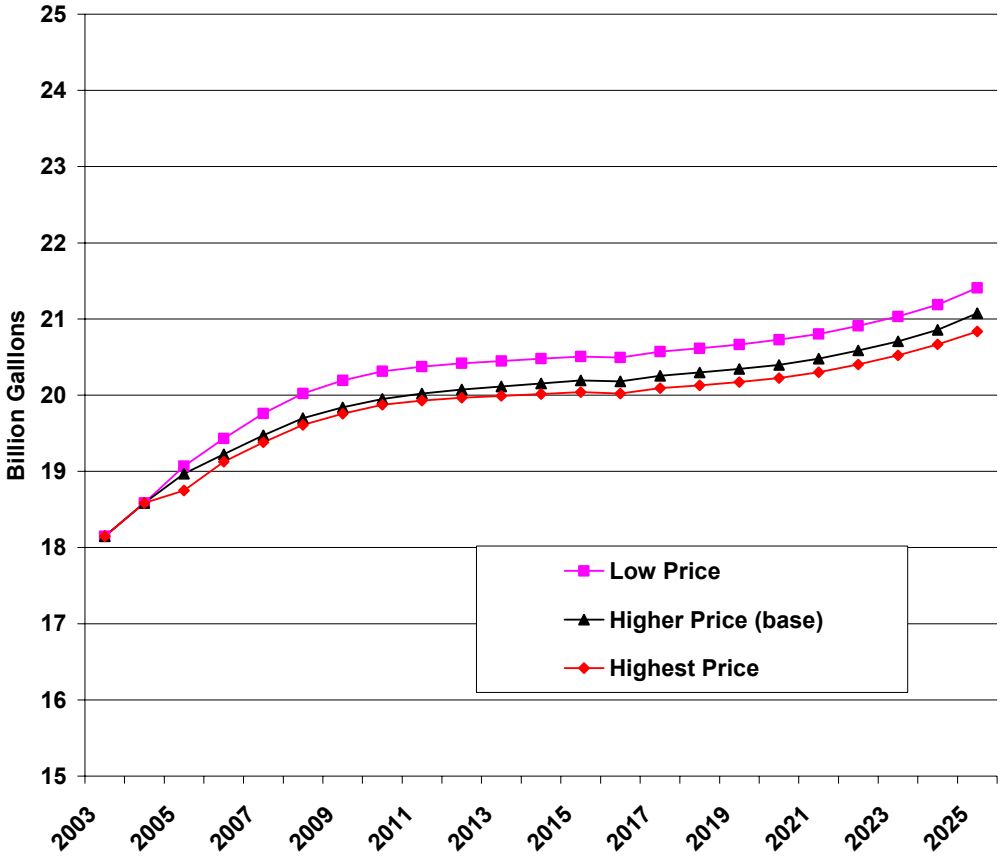
Lower average annual rate of growth in gasoline demand in 2005 forecast versus 2003 forecast, even with no implementation of greenhouse gas regulations: 1.35% in 2003 forecast, 0.9% in 2005 alternative forecast. Reasons:

- Lower projected population growth
- More light-duty diesel vehicle sales
- Increase in fuel efficiency for conventional gasoline vehicles in 2005 forecast, no increase in 2003 forecast

Alternative Gasoline and Diesel Price Scenarios (2005$)



Impact of Prices on Base Case Forecast of Gasoline Plus Diesel



Impact of Prices on Alternative Forecast of Gasoline Plus Diesel